

### REMARKS

The above-identified patent application has been amended and reconsideration and re-examination are hereby requested.

The Examiner objected to the drawings noting errors in FIGS 3B and 4B. Applicant has made the changes to the specification and drawings as appropriate to correct informalities pointed out by the Examiner and as noticed by Applicant.

Applicant has enclosed proposed drawing changes with changes marked in red. Approval of these drawing changes is requested so Applicant can submit substitute drawings upon indication of allowable subject matter.

The Examiner also pointed out minor errors in the specification. Applicant has added continuing application data to the specification and has corrected the item noting on page 11. Applicant draws the examiner's attention to page 17 where Applicant concludes the specification by stating: "What is claimed is:.". This is a sufficient term to conclude the specification.

The Examiner objected to claims 18, 39 and 54 under 35 U.S.C. 112, second paragraph, as being indefinite. Specifically, the Examiner stated that the claims lack antecedent basis for "the second set of constructed fares." Applicant has amended claim 18 by changing dependency from claim 14 to claim 16. Thus, as amended, there is proper antecedent basis found in claim 18 for the second set of constructed fares from claim 16. A corresponding amendment has also been made to claim 39. Accordingly, it is submitted that the rejections of claims 18 and 39 under 35 U.S.C. 112, second paragraph, has been overcome and should be removed.

Applicant requests clarification on the Examiner's rejection of claim 54 since support for a second set of constructed fares is found within the claim itself.

The examiner rejected claims 1-46 and 52-55 under 35 U.S.C. 101 as being directed to non-statutory subject matter.

Claims 1-46 and 52-55 are directed to statutory subject matter. Claim 1 for instance recites "A method of producing constructed fares that includes an arbitrary added to a published fare, said method executed in a computer system." Claim 1 recites a result that is tangibly used

in a concrete manner that is to produce a constructed fare, so to permit pricing of an itinerary for travel.

Applicant's claims recite computer preprocessing. Claim 1 for instance recites searching a database having published fares for gateway cities and applying an arbitrary corresponding to one of the interior cities to a published fare involving one of the gateway cities determined interior cities appearing in the arbitraries to produce the constructed fare. Thus, searching a database recites origin of the data and applying the published fare (found in the database) to an arbitrary manipulates the data. Claim 1 thus does not merely claim an abstract idea. It positively claims a method of constructing a fare in a computer system.

Claim 1 does not lack a claimed practical application. Claim 1 recites a method of producing constructed fares ... the method comprising: determining interior cities ... searching a database ...; and applying an arbitrary ... to produce the constructed fare. Claim 1 recites functionality required to carry out the functions of the claimed invention in a concrete and tangible manner. Thus, the examiner's reliance on *In re Beauregard* and *State Street* is misplaced.

Moreover, the type of data and the calculations do indeed affect the operation of the claimed invention. Hence the examiner's reliance on *In re Gulack* is also misplaced.

Claim 22 recites "A computer program product residing on a computer readable medium, for producing constructed fares that includes an arbitrary added to a published fare, comprising instructions for causing a computer system ...":

Claim 22 positively recites a tangible embodiment of the invention a computer program product residing on a computer readable medium, as permitted by *Beauregard*.

Applicant also directs the examiner to *In re Lowry*, 32 F.3d, 1579, 32 U.S.P.Q. 2d 1031 (Fed. Cir. 1994). That case is directed to the patenting of memories or storage devices including data structures for use with application programs. The Fed Circuit repudiated the printed matter doctrine of *In re Gulack* at least as it applied to tangible embodiments of data structures on computer readable storage media. Thus, patentable weight must be given to data type and calculations recited in the claim.

Accordingly the rejection of these claims under 35 U.S.C. 101 as directed to non-statutory subject matter should be removed.

### Prior Art Rejections

Applicant's claims are allowable over the art of record. In general, for domestic travel airlines publish fares for markets. However, in situations where fares are not published, such as for markets involving minor cities, the airlines rely on a process called "fare construction" to price travel. The fares produced from this process are often called "constructed fares." Fare construction is especially used for international travel. For markets involving major cities like the NYC-PAR market, airlines provide published fares, that is, stated prices for travel between the two cities. For markets involving minor cities fare construction is used to produce a price for a ticket. The airlines provide a mechanism to extend a published fare between international destinations with an add-on or arbitrary which is a published amount that extends a published fare, but which cannot be used alone to produce a fare, in order to derive prices for international flights between or involving minor cities or markets. While, the major cities or gateways have published fares between the gateways the minor cities or markets generally do not have such published fares.

The claims are directed to a technique to efficiently determine these constructed fares.

The Examiner rejected claims 1-46 and 52-55 under 35 U.S.C. 103 as being unpatentable over Takiguchi, Webber, Hornick (WO'92), Hornick ('184), Odagaki, Vance, O'Brien or Hamzade. In essence, the Examiner took the position that

[the references] disclose a computerized travel planning system in which the cost of an itinerary is constructed/determined by summing the cost of each leg of travel included in the itinerary.

Applicant's claim 1 has been amended to recite ... determining interior cities that appear with gateway cities in arbitraries for the airline, the arbitraries being published amounts that extend published fares and which cannot be used alone to produce a fare ... .

Claim 1 is distinct over these references since the references do not describe in combination ... determining interior cities that appear with gateway cities in arbitraries, arbitraries being published amounts that extend published fares and, which cannot be used alone to produce a fare ... searching for gateway cities corresponding to determined cities ... and applying an arbitrary corresponding to one of the interior cities to a published fare involving one of the gateway cities to produce the constructed fare.

The examiner further states that:

...a customer wishing to travel from point A to point B and back to point A, where there is not a direct flight from point A to point B, would start at point A (an arbitrary of an airline) and travel to point A1 (a gateway) where point A1 would permit the traveler to continue on the next leg of the itinerary. From point A2 the traveler would travel to point A3 and so on until the final destination of point B is reached (an other arbitrary/gateway) has been reached.

The examiner misapplies the concept of arbitraries. The examiner's statement: "[...] a customer wishing to travel from point A to point B and back to point A, where there is not a direct flight from point A to point B, would start at point A (an arbitrary of an airline) and travel to point A1, (a gateway) where point A1 would permit the traveler to continue to the next leg of the itinerary" is incorrect. Applicant submits that it is incorrect to refer to "point A" as "an arbitrary", or even to draw an analogy thereto. As mentioned and as reflected in the claims, an arbitrary is an amount published for use only in combination with specified published fares. An arbitrary is not a point. In other words, an arbitrary is a particular type of tariff whose definition is agreed upon and well understood by the industry. The examiner's focus is on itineraries. Itineraries are by definition composed of flights. Claim 1 in contrast recites a process to construct fares. By industry convention, fares define tariffs, i.e., how much a trip will cost not which flights will be taken. Fares and flights are completely different concepts.

The examiner has not given any patentable weight to the terms "gateway" and "arbitrary." These terms are well known in the art as discussed in Applicant's background and as evidenced by the enclosed draft paper from ATPCO entitled *DATA APPLICATION CONSTRUCTED FARES* Version 1.0. As used by Applicant and by industry these terms do not have the meanings ascribed to them by the examiner.

Claim 1 as amended to recite that arbitraries being published amounts that extend published fares and which cannot be used alone to produce a fare is clearly distinguished over these references and overcomes the examiner's reasoning since in the examiner's scenario, travel between point A and point B whether or not there are direct flights all deal with published fares. Moreover, the references themselves do not use the concepts defined by these terms and have no notion of these terms or of "constructed fares."

Therefore, the art of record does not determine interior cities that appear with gateway cities and arbitraries for the airline. Moreover, the process also does not search for gateway cities corresponding to determined interior cities appearing in the arbitraries. Applicant has provided a new technique to produce constructed fares for such travel that improves computation speed and enables faster updating of constructed fares.

Applicant's claims 2-13, which depend directly or indirectly from claim 1 add further allowable features to Applicant's invention. For example, Applicant's claim 2, which recites that determining interior cities comprises accessing a hash table by airline interior city pair to return a list of gateway cities is not suggested by the art of reference. None of the references suggest the use of hash tables to store interior city pairs and to provide in response a return of gateway cities for which an airline has arbitrary to specify the interior city.

Claim 3 distinguishes over the art since the art does not suggest accessing occurring in constant time.

Claim 4, which recites that searching for gateways also comprises accessing a hash table by an airline gateway pair to return a list of gateway cities, is not suggested by the art.

Claim 5, which recites accessing a first hash table by an airline interior city pair... and accessing a second hash table by an airline gateway pair to return a second list of gateway cities is also likewise not suggested by the art.

Claim 6 recites accessing first and second hash table returns in constant time are not suggested by the art.

Claims 7-9 add further allowable features to Applicant's invention. Claim 9, for example, which recites a memoizing process for application of rules to determine whether or not to construct a constructed fare, is not suggested by the art. Applicant's claims 10-13 are likewise allowable over the art since the art does not suggest the features of those claims.

Applicant's claim 14 is allowable over the art for the reasons generally discussed in conjunction with claim 1 and further since claim 14 is limited to a method for producing constructed fares for an airline. Claim 14 recites determining interior cities that appear with gateway cities in arbitraries for the airline, which is not suggested by the art. Similarly, the aspects of searching and applying are likewise not suggested by the art as recited in claim 14.

Applicant's claims 15-21 are likewise allowable over the art for similar reasons as discussed in conjunction with claims 1-13, specifically, however, as limited to constructing fares for an airline.

Applicant's claims 22-46 are allowable over the art for similar reasons as discussed in conjunction with claims 1-21, specifically, however, as directed to a computer program product for providing instructions to cause a computer to execute the recited operations. Thus, claim 22 for example, which recites instructions for causing a computer to determine interior cities that appear with gateway cities and arbitraries for the airline, or claim 35 which recites instructions to determine interior cities that appear with gateway cities and arbitraries for the airline for which international fares are being determined is neither described nor suggested by the art, as generally discussed in conjunction with claim 14.

Applicant's claim 52 is allowable over the art of record since the art neither describes nor suggests accessing a first hash table by airline interior city pair to return a list of gateway cities ... accessing a second hash table by airline gateway pair to return a second list of gateway cities ... applying the first arbitraries from the first hash table to the published fares from the second hash table to return a list of potential constructed fares and determining ... a valid constructed fare ... producing the constructed fare.

Hence, claim 52 as well as claims 53- 54, which depend on claim 52 are likewise allowable over the art of record.

Applicant has enclosed three references that deal with fare construction. These references taken separately or in combination with the art of record neither describe nor suggest the invention as defined in the claims.